



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Appln. of : Tomohiro MAEKAWA
Serial No. : 09/161,283
Filed : September 28, 1998
For : LAMINATED EXTRUDED RESIN SHEET
T/C- Group Art Unit : 1773
Examiner : KEVIN R. KRUER
Attorney Docket : 7372/70988
Customer Nos. : 42798 and 22242

Confirmation No. : 7428

DECLARATION OF TOMOHIRO MAEKAWA UNDER 37C.F.R.1.132

Honorable Commissioner of Patents and Trademarks
220 20th Street S.
Customer Window, Mail Stop, Non Fee Amendment
Crystal Plaza Two, Lobby, Room 1B03
Arlington, VA 22202

Dear Sir:

I, Tomohiro MAEKAWA, residing at 2-3-733, Ikku-cho,
Niihama-shi, Ehime, Japan, hereby declare and say as follows:

1) I am the inventor named on the above-identified application;
2) I graduated from Osaka Prefectural College of Technology
(Department of Applied Chemistry) in March, 1991.

3) Since April 1991 to the present, I have been employed by
Sumitomo Chemical Co., Ltd., assignee of the above-identified application,
and engaged in research and development in the field of polymer chemistry.
I have experience with the procedures for making core-shell polymer particles

and with procedures for making particles that are considered single layer particles that may be said to have a uniform structure.

4) I have read and presently believe that I understand the Office Action issued on April 5, 2004 in the above-identified application.

5) I am the same individual who executed (signed) a "DECLARATION OF TOMOHIRO MAEKAWA UNDER 37C.F.R.1.132" that, upon present information and belief, was submitted herein on October 22, 2002. My prior Declaration reported Experiments that were carried out to measure impact resistance of resin sheets, which contain resin particles with a particle size of 12 μ m (in Example A), 20 μ m (in Example B), 35 μ m (in Example C) or 50 μ m (in Comparative Example A), respectively. A report of the results of the experiments was set forth in my prior Declaration.

6) A one-stage procedure for suspension polymerization method is reported in Reference Example 2 in the present specification and attention is directed, for example, to page 16, line 22 to page 17, line 17. The one stage procedure for suspension polymerization was carried out. As a result, in my opinion and belief, single-layered, insoluble methyl methacrylate resin particles are (were) obtained.

7) I consider the results obtained in Reference Example 2 in the present specification consistent with the polymerization methods for producing the insoluble methyl methacrylate resin particles, which are disclosed in the present specification, at page 11, lines 3-8, because such disclosed methods ordinarily, usually, would be understood as providing

single layer particles, rather than core-shell structure particles. Specifically, the particles obtainable by the described methods, such as an emulsion polymerization method, a dispersion polymerization method, a suspension polymerization method, suspension polymerization method and micro-suspension polymerization method, are ordinarily, usually considered as having a single layer structure. This is because the methods disclosed therein consist of respective one-stage procedure, while the production method for obtaining core-shell structure particles need to consist of specific, at least two-stage procedures.

8) In my opinion based on my experience, it takes at least two-stage procedures to obtain core-shell structure particles: the first stage is for preparing core particles and the second stage is for preparing a shell polymer around the core particles. A typical method for producing core-shell structure particles is a seed swelling polymerization method. In this typical method, a monomer is first polymerized alone to prepare core (single-layered) particles, and then after the completion of the first polymerization, another monomer with high affinity toward the core particles is added thereto and is polymerized around the core particles so that shell polymer is provided around the core particles. As mentioned above, the second monomer needs to be added after the completion of the first polymerization to obtain core-shell structure particles. If the first and second monomers are mixed with each other and are polymerized together in a single step, core-shell structure particles are not obtained.

9) Therefore in my opinion, which is in accordance with Reference Example 2 and the described exemplary techniques for producing the insoluble methyl methacrylate particles in the present specification, the present specification relates procedures that inherently, inevitably yield desired particles, *i.e.*, uniform, single-layered particles which should be contained in resin layer (B). The aforementioned description includes the passages in the present specification at page 9, lines 8-12; page 10, lines 1-8; page 11, lines 3-8; page 16, line 22 to page 17, line 17; and the like.

10) Based on the foregoing, the expression "the insoluble methyl methacrylate resin particles are particles which are obtainable by one-stage polymerization of a monomer composition containing 50 % by weight or more of methyl methacrylate" describes the insoluble methyl methacrylate particles in resin layer (B) as not core-shell structured. The particles defined in the product-by-process language inherently can be considered uniform, single-layered particles, rather than particles that are considered as having a core-shell structure.

11) The present specification describes, although not perhaps not explicitly, some undesired results are apparently observed with the presence of insoluble methyl methacrylate particles in Comparative Example 4. The sheet of resin layer (B) alone, which contains insoluble methyl methacrylate particles all over, has larger bias in thickness compared to the sheet composed of intermediate resin layer (A) free from insoluble methyl methacrylate particles and surface resin layers (B) in Examples 1-4.

12) Based on the present specification, including Comparative Example 4, the expression "the resin layer (A) consisting essentially of a methyl methacrylate resin and at least one optional additive selected from the group consisting essentially of a light diffusing agent, dye, optical stabilizer, ultraviolet and anti-electrostatic agent", or comparable expression, describes a resin layer such that it does not contain insoluble methyl methacrylate particles that cause the undesired results as observable from the results reported in Comparative Example 4. The above recounted expression finds basis in the present specification, such as at page 13, lines 10-16.

I, the undersigned, declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so that made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Tomohiro Maekawa
Tomohiro MAEKAWA

Dated this 5th day of August, 2004